CLAIMS

What is claimed is:

1. A device that operates within a piconet, the device comprising:

a PHY (physical layer) that includes link quality intelligence gathering functionality;

a MAC (Medium Access Controller) that is communicatively coupled to the PHY;

wherein the link quality intelligence gathering functionality is operable to assess a plurality of operational parameters that corresponds to a PHY link that communicatively couples the PHY of the device to a PHY of at least one additional device; and

wherein the PHY of the device is operable to provide assessed information corresponding to the plurality of operational parameters to the MAC.

2. The device of claim 1, wherein:

the MAC processes the assessed information corresponding to the plurality of operational parameters; and

based on the processed assessed information, the MAC modifies at least one operational parameter of the plurality of operational parameters.

3. The device of claim 1, wherein:

the MAC processes the assessed information corresponding to the plurality of operational parameters;

the device also includes a higher application layer, communicatively coupled to the MAC, that supports a first service;

the MAC provides the processed assessed information to the higher application layer; and

based on the processed assessed information provided to the higher application layer, the higher application layer terminates the first service to maintain communication between the device and the at least one additional device via the PHY link.

4. The device of claim 1, wherein:

the MAC directs the link quality intelligence gathering functionality of the PHY to assess the plurality of operational parameters.

5. The device of claim 1, wherein:

the MAC directs the link quality intelligence gathering functionality of the PHY to assess a first plurality of operational parameters that is a subset of the plurality of operational parameters;

the PHY of the device provides assessed information corresponding to the first plurality of operational parameters to the MAC;

the MAC processes the assessed information; and

based on the processed assessed information, the MAC directs the link quality intelligence gathering functionality of the PHY to assess a second plurality of operational parameters that is a subset of the plurality of operational parameters.

6. The device of claim 5, wherein:

the first plurality of operational parameters and the second plurality of operational parameters include at least one common operational parameter.

7. The device of claim 1, wherein:

during a first time, the MAC directs the link quality intelligence gathering functionality of the PHY to assess a first plurality of operational parameters that is a subset of the plurality of operational parameters; and

during a second time, the MAC directs the link quality intelligence gathering functionality of the PHY to assess a second plurality of operational parameters that is a subset of the plurality of operational parameters.

8. The device of claim 7, wherein:

the first plurality of operational parameters and the second plurality of operational parameters include at least one common operational parameter.

9. The device of claim 1, wherein:

the at least one additional device is a PNC (piconet coordinator);

the PHY of the at least one additional device is a PHY of the PNC;

the device is a DEV (user piconet device);

the PHY of the PNC includes link quality intelligence gathering functionality;

the PNC includes a MAC that is communicatively coupled to the PHY of the PNC;

the MAC of the PNC includes DEV direction functionality;

the link quality intelligence gathering functionality of the PHY of the PNC assesses at least one additional plurality of operational parameters that corresponds to the PHY link that communicatively couples the PHY of the DEV to the PHY of the PNC;

the PHY of the PNC provides at least one additional assessed information corresponding to the at least one additional plurality of operational parameters to the MAC of the PNC;

the MAC of the PNC processes the at least one additional assessed information corresponding to the at least one additional plurality of operational parameters;

the DEV transmits information corresponding to the PHY link from the DEV to the PNC; and

based on the processed at least one additional assessed information and based on the information corresponding to the PHY link that is transmitted from the DEV to the PNC, the DEV direction functionality of the PNC's MAC directs the DEV to change at least operational parameter of the plurality of operational parameters that corresponds to the PHY link that communicatively couples the PHY of the DEV to the PHY of the PNC.

10. The device of claim 1, wherein:

a first operational parameter of the plurality of operational parameters that corresponds to the PHY link corresponds to a first modulation used to modulate a signal transmitted across the PHY link;

a second operational parameter of the plurality of operational parameters that corresponds to the PHY link corresponds to an interference of the signal transmitted across the PHY link;

the MAC processes the assessed information corresponding to the second operational parameter thereby monitoring the interference of the signal transmitted across the PHY link;

based on a change in the interference of the signal transmitted across the PHY link, the MAC changes the first operational parameter from the first modulation to a second modulation; and

the second modulation is subsequently used to modulate the signal transmitted across the PHY link.

11. The device of claim 1, wherein:

a first operational parameter of the plurality of operational parameters that corresponds to the PHY link corresponds to a first TFC (time frequency code) that directs the modulation of OFDM (Orthogonal Frequency Division Multiplexing) symbols of a signal transmitted across the PHY link;

a second operational parameter of the plurality of operational parameters that corresponds to the PHY link corresponds to interference of the signal transmitted across the PHY link;

the MAC processes the assessed information corresponding to the second operational parameter thereby monitoring the interference of the signal transmitted across the PHY link;

based on a change in the interference of the signal transmitted across the PHY link, the MAC changes the first operational parameter from the first TFC to a second TFC; and

the second TFC is subsequently used to direct modulation of OFDM symbols of the signal transmitted across the PHY link.

12. The device of claim 1, wherein:

a first operational parameter of the plurality of operational parameters that corresponds to the PHY link corresponds to a distance between the device and the at least one additional device;

a second operational parameter of the plurality of operational parameters that corresponds to the PHY link corresponds to a first modulation used to modulate a signal transmitted across the PHY link;

the MAC processes the assessed information corresponding to the second operational parameter thereby determining the distance between the device and the at least one additional device;

based on a change in the distance between the device and the at least one additional device, the MAC changes the second operational parameter from the first modulation to a second modulation; and

the second modulation is subsequently used to modulate the signal transmitted across the PHY link.

13. The device of claim 1, wherein:

the MAC processes the assessed information corresponding to the plurality of operational parameters;

the at least one additional device provides a registration request to the device when trying to register to the piconet; and

based on the processed assessed information, the MAC determines whether to accept or deny the registration request of the at least one additional device.

14. The device of claim 1, wherein:

an operational parameter of the plurality of operational parameters corresponds to at least one of:

a distance between the device and the at least one additional device;

a location of the device;

a location of the at least one additional device;

interference of a signal transmitted across the PHY link;

a data rate employed for a signal transmitted across the PHY link;

a QoS (Quality of Service) of the PHY link;

a SNR (Signal to Noise Ratio) of a signal transmitted across the PHY link;

a PN (Pseudo-Noise) code assigned to spread UWB (Ultra Wide Band) pulses of a signal transmitted across the PHY link;

a power level of a signal transmitted across the PHY link;

a code rate of a signal transmitted across the PHY link;

a modulation that modulates a signal transmitted across the PHY link; and

a TFC (time frequency code) that modulates OFDM (Orthogonal Frequency Division Multiplexing) symbols of a signal transmitted across the PHY link.

15. The device of claim 1, wherein:

the device is a PNC (piconet coordinator); and

the at least one additional device is a DEV (user piconet device).

16. A device that operates within a piconet, the device comprising:

a PHY (physical layer) that includes link quality intelligence gathering functionality;

a MAC (Medium Access Controller) that is communicatively coupled to the PHY;

wherein the MAC directs the link quality intelligence gathering functionality of the PHY to operable to assess a plurality of operational parameters that corresponds to a PHY link that communicatively couples the PHY of the device to a PHY of at least one additional device;

wherein the PHY of the device is operable to provide assessed information corresponding to the plurality of operational parameters to the MAC;

wherein the MAC processes the assessed information corresponding to the plurality of operational parameters;

wherein based on the processed assessed information, the MAC is operable to modify at least one operational parameter of the plurality of operational parameters.

17. The device of claim 16, wherein:

the device also includes a higher application layer, communicatively coupled to the MAC, that supports a first service;

the MAC provides the processed assessed information to the higher application layer; and

based on the processed assessed information provided to the higher application layer, the higher application layer terminates the first service to maintain communication between the device and the at least one additional device via the PHY link.

18. The device of claim 17, wherein:

the MAC directs the link quality intelligence gathering functionality of the PHY to assess a first plurality of operational parameters that is a subset of the plurality of operational parameters;

the PHY of the device provides assessed information corresponding to the first plurality of operational parameters to the MAC;

the MAC processes the assessed information; and

based on the processed assessed information, the MAC directs the link quality intelligence gathering functionality of the PHY to assess a second plurality of operational parameters that is a subset of the plurality of operational parameters.

19. The device of claim 18, wherein:

the first plurality of operational parameters and the second plurality of operational parameters include at least one common operational parameter.

20. The device of claim 16, wherein:

during a first time, the MAC directs the link quality intelligence gathering functionality of the PHY to assess a first plurality of operational parameters that is a subset of the plurality of operational parameters; and

during a second time, the MAC directs the link quality intelligence gathering functionality of the PHY to assess a second plurality of operational parameters that is a subset of the plurality of operational parameters.

21. The device of claim 20, wherein:

the first plurality of operational parameters and the second plurality of operational parameters include at least one common operational parameter.

22. The device of claim 16, wherein:

the at least one additional device is a PNC (piconet coordinator);

the PHY of the at least one additional device is a PHY of the PNC;

the device is a DEV (user piconet device);

the PHY of the PNC includes link quality intelligence gathering functionality;

the PNC includes a MAC that is communicatively coupled to the PHY of the PNC;

the MAC of the PNC includes DEV direction functionality;

the link quality intelligence gathering functionality of the PHY of the PNC assesses at least one additional plurality of operational parameters that corresponds to the PHY link that communicatively couples the PHY of the DEV to the PHY of the PNC;

the PHY of the PNC provides at least one additional assessed information corresponding to the at least one additional plurality of operational parameters to the MAC of the PNC;

the MAC of the PNC processes the at least one additional assessed information corresponding to the at least one additional plurality of operational parameters;

the DEV transmits information corresponding to the PHY link from the DEV to the PNC; and

based on the processed at least one additional assessed information and based on the information corresponding to the PHY link that is transmitted from the DEV to the PNC, the DEV direction functionality of the PNC's MAC directs the DEV to change at least operational parameter of the plurality of operational parameters that corresponds to the PHY link that communicatively couples the PHY of the DEV to the PHY of the PNC.

23. The device of claim 16, wherein:

a first operational parameter of the plurality of operational parameters that corresponds to the PHY link corresponds to a first modulation used to modulate a signal transmitted across the PHY link;

a second operational parameter of the plurality of operational parameters that corresponds to the PHY link corresponds to an interference of the signal transmitted across the PHY link;

the MAC processes the assessed information corresponding to the second operational parameter thereby monitoring the interference of the signal transmitted across the PHY link;

based on a change in the interference of the signal transmitted across the PHY link, the MAC changes the first operational parameter from the first modulation to a second modulation; and

the second modulation is subsequently used to modulate the signal transmitted across the PHY link.

24. The device of claim 16, wherein:

a first operational parameter of the plurality of operational parameters that corresponds to the PHY link corresponds to a first TFC (time frequency code) that directs the modulation of OFDM (Orthogonal Frequency Division Multiplexing) symbols of a signal transmitted across the PHY link;

a second operational parameter of the plurality of operational parameters that corresponds to the PHY link corresponds to interference of the signal transmitted across the PHY link;

the MAC processes the assessed information corresponding to the second operational parameter thereby monitoring the interference of the signal transmitted across the PHY link;

based on a change in the interference of the signal transmitted across the PHY link, the MAC changes the first operational parameter from the first TFC to a second TFC; and

the second TFC is subsequently used to direct modulation of OFDM symbols of the signal transmitted across the PHY link.

25. The device of claim 16, wherein:

a first operational parameter of the plurality of operational parameters that corresponds to the PHY link corresponds to a distance between the device and the at least one additional device;

a second operational parameter of the plurality of operational parameters that corresponds to the PHY link corresponds to a first modulation used to modulate a signal transmitted across the PHY link;

the MAC processes the assessed information corresponding to the second operational parameter thereby the distance between the device and the at least one additional device;

based on a change in the distance between the device and the at least one additional device, the MAC changes the second operational parameter from the first modulation to a second modulation; and

the second modulation is subsequently used to modulate the signal transmitted across the PHY link.

26. The device of claim 16, wherein:

the MAC processes the assessed information corresponding to the plurality of operational parameters;

the at least one additional device provides a registration request to the device when trying to register to the piconet; and

based on the processed assessed information, the MAC determines whether to accept or deny the registration request of the at least one additional device.

27. The device of claim 16, wherein:

an operational parameter of the plurality of operational parameters corresponds to at least one of:

a distance between the device and the at least one additional device;

a location of the device;

a location of the at least one additional device;

interference of a signal transmitted across the PHY link;

a data rate employed for a signal transmitted across the PHY link;

a QoS (Quality of Service) of the PHY link;

a SNR (Signal to Noise Ratio) of a signal transmitted across the PHY link;

a PN (Pseudo-Noise) code assigned to spread UWB (Ultra Wide Band) pulses of a signal transmitted across the PHY link;

a power level of a signal transmitted across the PHY link;

a code rate of a signal transmitted across the PHY link;

a modulation that modulates a signal transmitted across the PHY link; and

a TFC (time frequency code) that modulates OFDM (Orthogonal Frequency Division Multiplexing) symbols of a signal transmitted across the PHY link.

28. The device of claim 16, wherein:

the device is a PNC (piconet coordinator); and

the at least one additional device is a DEV (user piconet device).

29. A device that operates within a piconet, the device comprising:

a PHY (physical layer) that includes link quality intelligence gathering functionality;

a MAC (Medium Access Controller) that is communicatively coupled to the PHY;

wherein the link quality intelligence gathering functionality is operable to assess a plurality of operational parameters that corresponds to a PHY link that communicatively couples the PHY of the device to a PHY of at least one additional device;

wherein the PHY of the device is operable to provide assessed information corresponding to the plurality of operational parameters to the MAC;

wherein during a first time, the MAC directs the link quality intelligence gathering functionality of the PHY to assess a first plurality of operational parameters that is a subset of the plurality of operational parameters; and

wherein during a second time, the MAC directs the link quality intelligence gathering functionality of the PHY to assess a second plurality of operational parameters that is a subset of the plurality of operational parameters.

30. The device of claim 29, wherein:

the first plurality of operational parameters and the second plurality of operational parameters include at least one common operational parameter.

31. The device of claim 29, wherein:

the MAC processes the assessed information corresponding to the plurality of operational parameters;

the device also includes a higher application layer, communicatively coupled to the MAC, that supports a first service;

the MAC provides the processed assessed information to the higher application layer; and

based on the processed assessed information provided to the higher application layer, the higher application layer terminates the first service to maintain communication between the device and the at least one additional device via the PHY link.

32. The device of claim 29, wherein:

the MAC processes the assessed information corresponding to the plurality of operational parameters;

the at least one additional device provides a registration request to the device when trying to register to the piconet; and

based on the processed assessed information, the MAC determines whether to accept or deny the registration request of the at least one additional device.

33. The device of claim 29, wherein:

an operational parameter of the plurality of operational parameters corresponds to at least one of:

a distance between the device and the at least one additional device;

a location of the device;

a location of the at least one additional device;

interference of a signal transmitted across the PHY link;

a data rate employed for a signal transmitted across the PHY link;

a QoS (Quality of Service) of the PHY link;

a SNR (Signal to Noise Ratio) of a signal transmitted across the PHY link;

a PN (Pseudo-Noise) code assigned to spread UWB (Ultra Wide Band) pulses of a signal transmitted across the PHY link;

a power level of a signal transmitted across the PHY link;

a code rate of a signal transmitted across the PHY link;

a modulation that modulates a signal transmitted across the PHY link; and

a TFC (time frequency code) that modulates OFDM (Orthogonal Frequency Division Multiplexing) symbols of a signal transmitted across the PHY link.

34. The device of claim 29, wherein:

the device is a PNC (piconet coordinator); and

the at least one additional device is a DEV (user piconet device).

35. A method for providing link quality intelligence from a PHY (physical layer) to at least one higher protocol layer of a device that operates within a piconet, the method comprising:

assessing a plurality of operational parameters that corresponds to a PHY link that communicatively couples the PHY of the device to a PHY of at least one additional device;

providing assessed information corresponding to the plurality of operational parameters to a MAC (Medium Access Controller) of the device; and

wherein the MAC (Medium Access Controller) is communicatively coupled to the PHY.

36. The method of claim 35, wherein:

processing the assessed information corresponding to the plurality of operational parameters; and

based on the processed assessed information, modifying at least one operational parameter of the plurality of operational parameters.

37. The method of claim 35, wherein:

the MAC processes the assessed information corresponding to the plurality of operational parameters;

the device also includes a higher application layer, communicatively coupled to the MAC, that supports a first service;

the MAC provides the processed assessed information to the higher application layer; and

based on the processed assessed information provided to the higher application layer, the higher application layer terminates the first service to maintain communication between the device and the at least one additional device via the PHY link.

38. The method of claim 35, wherein:

the PHY includes link quality intelligence gathering functionality; and

the MAC directs the link quality intelligence gathering functionality of the PHY to assess the plurality of operational parameters.

39. The method of claim 35, wherein:

the PHY includes link quality intelligence gathering functionality;

the MAC directs the link quality intelligence gathering functionality of the PHY to assess a first plurality of operational parameters that is a subset of the plurality of operational parameters;

the PHY of the device provides assessed information corresponding to the first plurality of operational parameters to the MAC;

the MAC processes the assessed information; and

based on the processed assessed information, the MAC directs the link quality intelligence gathering functionality of the PHY to assess a second plurality of operational parameters that is a subset of the plurality of operational parameters.

40. The method of claim 39, wherein:

the first plurality of operational parameters and the second plurality of operational parameters include at least one common operational parameter.

41. The method of claim 35, wherein:

the PHY includes link quality intelligence gathering functionality;

during a first time, the MAC directs the link quality intelligence gathering functionality of the PHY to assess a first plurality of operational parameters that is a subset of the plurality of operational parameters; and

during a second time, the MAC directs the link quality intelligence gathering functionality of the PHY to assess a second plurality of operational parameters that is a subset of the plurality of operational parameters.

42. The method of claim 41, wherein:

the first plurality of operational parameters and the second plurality of operational parameters include at least one common operational parameter.

43. The method of claim 35, wherein:

the at least one additional device is a PNC (piconet coordinator);

the PHY of the at least one additional device is a PHY of the PNC;

the device is a DEV (user piconet device);

the PHY of the PNC includes link quality intelligence gathering functionality;

the PNC includes a MAC that is communicatively coupled to the PHY of the PNC;

the MAC of the PNC includes DEV direction functionality;

the link quality intelligence gathering functionality of the PHY of the PNC assesses at least one additional plurality of operational parameters that corresponds to the PHY link that communicatively couples the PHY of the device to the PHY of the PNC;

the PHY of the PNC provides at least one additional assessed information corresponding to the at least one additional plurality of operational parameters to the MAC of the PNC;

the MAC of the PNC processes the at least one additional assessed information corresponding to the at least one additional plurality of operational parameters;

the DEV transmits information corresponding to the PHY link from the DEV to the PNC; and

based on the processed at least one additional assessed information and based on the information corresponding to the PHY link that is transmitted from the DEV to the PNC, the DEV direction functionality of the PNC's MAC directs the DEV to change at least operational parameter of the plurality of operational parameters that corresponds to the PHY link that communicatively couples the PHY of the DEV to the PHY of the PNC.

44. The method of claim 35, wherein:

a first operational parameter of the plurality of operational parameters that corresponds to the PHY link corresponds to a first modulation used to modulate a signal transmitted across the PHY link;

a second operational parameter of the plurality of operational parameters that corresponds to the PHY link corresponds to an interference of the signal transmitted across the PHY link;

the MAC processes the assessed information corresponding to the second operational parameter thereby monitoring the interference of the signal transmitted across the PHY link;

based on a change in the interference of the signal transmitted across the PHY link, the MAC changes the first operational parameter from the first modulation to a second modulation; and

the second modulation is subsequently used to modulate the signal transmitted across the PHY link.

45. The method of claim 35, wherein:

a first operational parameter of the plurality of operational parameters that corresponds to the PHY link corresponds to a first TFC (time frequency code) that directs the modulation of OFDM (Orthogonal Frequency Division Multiplexing) symbols of a signal transmitted across the PHY link;

a second operational parameter of the plurality of operational parameters that corresponds to the PHY link corresponds to interference of the signal transmitted across the PHY link;

the MAC processes the assessed information corresponding to the second operational parameter thereby monitoring the interference of the signal transmitted across the PHY link;

based on a change in the interference of the signal transmitted across the PHY link, the MAC changes the first operational parameter from the first TFC to a second TFC; and

the second TFC is subsequently used to direct modulation of OFDM symbols of the signal transmitted across the PHY link.

46. The method of claim 35, wherein:

a first operational parameter of the plurality of operational parameters that corresponds to the PHY link corresponds to a distance between the device and the at least one additional device;

a second operational parameter of the plurality of operational parameters that corresponds to the PHY link corresponds to a first modulation used to modulate a signal transmitted across the PHY link;

the MAC processes the assessed information corresponding to the second operational parameter thereby the distance between the device and the at least one additional device;

based on a change in the distance between the device and the at least one additional device, the MAC changes the second operational parameter from the first modulation to a second modulation; and

the second modulation is subsequently used to modulate the signal transmitted across the PHY link.

47. The method of claim 35, wherein:

the MAC processes the assessed information corresponding to the plurality of operational parameters;

the at least one additional device provides a registration request to the device when trying to register to the piconet; and

based on the processed assessed information, the MAC determines whether to accept or deny the registration request of the at least one additional device.

48. The method of claim 35, wherein:

an operational parameter of the plurality of operational parameters corresponds to at least one of:

a distance between the device and the at least one additional device;

a location of the device;

a location of the at least one additional device;

interference of a signal transmitted across the PHY link;

a data rate employed for a signal transmitted across the PHY link;

a QoS (Quality of Service) of the PHY link;

a SNR (Signal to Noise Ratio) of a signal transmitted across the PHY link;

a PN (Pseudo-Noise) code assigned to spread UWB (Ultra Wide Band) pulses of a signal transmitted across the PHY link;

a power level of a signal transmitted across the PHY link;

a code rate of a signal transmitted across the PHY link;

a modulation that modulates a signal transmitted across the PHY link; and

a TFC (time frequency code) that modulates OFDM (Orthogonal Frequency Division Multiplexing) symbols of a signal transmitted across the PHY link.

49. The method of claim 35, wherein:

the device is a PNC (piconet coordinator); and

the at least one additional device is a DEV (user piconet device).

50. A method for providing link quality intelligence from a PHY (physical layer) to at least one higher protocol layer of a device that operates within a piconet, the method comprising:

assessing a plurality of operational parameters that corresponds to a PHY link that communicatively couples the PHY of the device to a PHY of at least one additional device;

providing assessed information corresponding to the plurality of operational parameters to a MAC (Medium Access Controller) of the device;

wherein the MAC (Medium Access Controller) is communicatively coupled to the PHY;

processing the assessed information corresponding to the plurality of operational parameters; and

based on the processed assessed information, modifying at least one operational parameter of the plurality of operational parameters.

51. The method of claim 50, wherein:

the MAC processes the assessed information corresponding to the plurality of operational parameters;

the device also includes a higher application layer, communicatively coupled to the MAC, that supports a first service;

the MAC provides the processed assessed information to the higher application layer; and

based on the processed assessed information provided to the higher application layer, the higher application layer terminates the first service to maintain communication between the device and the at least one additional device via the PHY link.

52. The method of claim 50, wherein:

the PHY includes link quality intelligence gathering functionality; and

the MAC directs the link quality intelligence gathering functionality of the PHY to assess the plurality of operational parameters.

53. The method of claim 50, wherein:

the PHY includes link quality intelligence gathering functionality;

the MAC directs the link quality intelligence gathering functionality of the PHY to assess a first plurality of operational parameters that is a subset of the plurality of operational parameters;

the PHY of the device provides assessed information corresponding to the first plurality of operational parameters to the MAC;

the MAC processes the assessed information; and

based on the processed assessed information, the MAC directs the link quality intelligence gathering functionality of the PHY to assess a second plurality of operational parameters that is a subset of the plurality of operational parameters.

54. The method of claim 53, wherein:

the first plurality of operational parameters and the second plurality of operational parameters include at least one common operational parameter.

55. The method of claim 50, wherein:

the PHY includes link quality intelligence gathering functionality;

during a first time, the MAC directs the link quality intelligence gathering functionality of the PHY to assess a first plurality of operational parameters that is a subset of the plurality of operational parameters; and

during a second time, the MAC directs the link quality intelligence gathering functionality of the PHY to assess a second plurality of operational parameters that is a subset of the plurality of operational parameters.

56. The method of claim 55, wherein:

the first plurality of operational parameters and the second plurality of operational parameters include at least one common operational parameter.

57. The method of claim 50, wherein:

the at least one additional device is a PNC (piconet coordinator);

the PHY of the at least one additional device is a PHY of the PNC;

the device is a DEV (user piconet device);

the PHY of the PNC includes link quality intelligence gathering functionality;

the PNC includes a MAC that is communicatively coupled to the PHY of the PNC;

the MAC of the PNC includes DEV direction functionality;

the link quality intelligence gathering functionality of the PHY of the PNC assesses at least one additional plurality of operational parameters that corresponds to the PHY link that communicatively couples the PHY of the DEV to the PHY of the PNC;

the PHY of the PNC provides at least one additional assessed information corresponding to the at least one additional plurality of operational parameters to the MAC of the PNC;

the MAC of the PNC processes the at least one additional assessed information corresponding to the at least one additional plurality of operational parameters;

the DEV transmits information corresponding to the PHY link from the DEV to the PNC; and

based on the processed at least one additional assessed information and based on the information corresponding to the PHY link that is transmitted from the DEV to the PNC, the DEV direction functionality of the PNC's MAC directs the DEV to change at least operational parameter of the plurality of operational parameters that

corresponds to the PHY link that communicatively couples the PHY of the DEV to the PHY of the PNC.

58. The method of claim 50, wherein:

a first operational parameter of the plurality of operational parameters that corresponds to the PHY link corresponds to a first modulation used to modulate a signal transmitted across the PHY link;

a second operational parameter of the plurality of operational parameters that corresponds to the PHY link corresponds to an interference of the signal transmitted across the PHY link;

the MAC processes the assessed information corresponding to the second operational parameter thereby monitoring the interference of the signal transmitted across the PHY link;

based on a change in the interference of the signal transmitted across the PHY link, the MAC changes the first operational parameter from the first modulation to a second modulation; and

the second modulation is subsequently used to modulate the signal transmitted across the PHY link.

59. The method of claim 50, wherein:

a first operational parameter of the plurality of operational parameters that corresponds to the PHY link corresponds to a first TFC (time frequency code) that directs the modulation of OFDM (Orthogonal Frequency Division Multiplexing) symbols of a signal transmitted across the PHY link;

a second operational parameter of the plurality of operational parameters that corresponds to the PHY link corresponds to interference of the signal transmitted across the PHY link;

the MAC processes the assessed information corresponding to the second operational parameter thereby monitoring the interference of the signal transmitted across the PHY link;

based on a change in the interference of the signal transmitted across the PHY link, the MAC changes the first operational parameter from the first TFC to a second TFC; and

the second TFC is subsequently used to direct modulation of OFDM symbols of the signal transmitted across the PHY link.

60. The method of claim 50, wherein:

a first operational parameter of the plurality of operational parameters that corresponds to the PHY link corresponds to a distance between the device and the at least one additional device;

a second operational parameter of the plurality of operational parameters that corresponds to the PHY link corresponds to a first modulation used to modulate a signal transmitted across the PHY link;

the MAC processes the assessed information corresponding to the second operational parameter thereby the distance between the device and the at least one additional device;

based on a change in the distance between the device and the at least one additional device, the MAC changes the second operational parameter from the first modulation to a second modulation; and

the second modulation is subsequently used to modulate the signal transmitted across the PHY link.

61. The method of claim 50, wherein:

the MAC processes the assessed information corresponding to the plurality of operational parameters;

the at least one additional device provides a registration request to the device when trying to register to the piconet; and

based on the processed assessed information, the MAC determines whether to accept or deny the registration request of the at least one additional device.

62. The method of claim 50, wherein:

an operational parameter of the plurality of operational parameters corresponds to at least one of:

a distance between the device and the at least one additional device;

a location of the device;

a location of the at least one additional device;

interference of a signal transmitted across the PHY link;

a data rate employed for a signal transmitted across the PHY link;

a QoS (Quality of Service) of the PHY link;

a SNR (Signal to Noise Ratio) of a signal transmitted across the PHY link;

a PN (Pseudo-Noise) code assigned to spread UWB (Ultra Wide Band) pulses of a signal transmitted across the PHY link;

a power level of a signal transmitted across the PHY link;

a code rate of a signal transmitted across the PHY link;

a modulation that modulates a signal transmitted across the PHY link; and

a TFC (time frequency code) that modulates OFDM (Orthogonal Frequency Division Multiplexing) symbols of a signal transmitted across the PHY link.

63. The method of claim 50, wherein:

the device is a PNC (piconet coordinator); and

the at least one additional device is a DEV (user piconet device).